

Appl. No. : 09/804,480  
Filed : March 12, 2001

### REMARKS

Claims 1-8 remain pending in the application. The Applicants have carefully considered all of the Examiner's rejections and remarks, but respectfully submit that the claims are allowable for at least the following reasons.

#### Rejections under § 103

The Examiner rejected Claims 1-8 under 35 U.S.C. § 103(a) as being unpatentable over *Gonzalez et al.* (1999) in view of *Tung et al.* (1992). The Examiner argued that *Gonzalez* teaches high-throughput screening through electrical stimulation. The Examiner also noted that *Gonzalez* does not teach the claimed biphasic stimulation protocol, but argued that *Tung* does.

Claims 1-8 are not obvious. A *prima facie* case of obviousness requires that all of the claim limitations are taught or suggested by the prior art. See M.P.E.P. § 2143.03. The specific elements and limitations in Claim 1 are not disclosed by either *Gonzalez* or *Tung*.

*Tung* does not disclose "electric fields [that] exhibit limited spatial variation in intensity in the area of observation of less than about 25% from a mean intensity in that area" as set forth in Claim 1. *Tung* teaches a single biphasic rectangular pulse applied to cardiac muscle cells in order to simulate the effect of such a pulse during electrical defibrillation of the heart, but does not teach "electric fields [that] exhibit limited spatial variation in intensity in the area of observation of less than about 25% from a mean intensity in that area." These specific elements of Claim 1 are also absent in *Gonzalez*. *Gonzalez* does not disclose electric fields that "exhibit limited spatial variation in intensity in the area of observation of less than about 25% from a mean intensity in that area."

Further, neither *Tung* nor *Gonzalez* teaches repetitive application of biphasic electric fields to cells at a rate of approximately 20 to 100 pulses per second. The Examiner has conceded that *Tung* "does not teach applying a series of [biphasic rectangular] pulses. Rather, *Tung* teaches applying only a single biphasic pulse." Office Action mailed December 1, 2005. Thus, *Tung* does not teach a rate of repetition of electric pulses. The Examiner has cited *Gonzalez* at page 437, first column, first full paragraph, to state that "electrical stimulation can be used for rapid and repetitive stimulation . . . using electrode array technology to apply the stimulus." Office Action mailed December 1, 2005 at page 3. At this citation, *Gonzalez* states that

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Techniques for rapid simulation of cellular membrane potential in microtiter plates would further bridge the gap between patch clamping results and optical assays while maintaining HTS [high throughput screening] compatibility. Approaches towards achieving this goal include rapid photolysis of chemically caged ligands that can rapidly activate channels that in turn induce membrane-potential changes. In this way, light is used to both elicit and measure changes in membrane potential. Alternatively, electrical stimulation can be used for rapid and repetitive stimulation in microtiter plates.

This citation does not teach or suggest the particular limitations from Claim 1 that require “repetitively exposing said one or more cells to a series of biphasic electric fields *at a rate of approximately 20 to 100 pulses per second.*” (Emphasis added.)

Neither *Tung* nor *Gonzalez* teaches or suggests electric fields that “exhibit limited spatial variation in intensity in the area of observation of less than about 25% from a mean intensity in that area.” Further, neither *Tung* nor *Gonzalez* teaches “repetitively exposing said one or more cells to a series of biphasic electric fields at a rate of approximately 20 to 100 pulses per second.” Because the cited prior art does not teach or suggest all the limitations of Claim 1 a *prima facie* case of obviousness has not been made. See M.P.E.P. § 2143.03. Thus, we respectfully request that the rejection of Claim 1 for obviousness be withdrawn. Further, because Claims 2-8 depend from Claim 1, we respectfully request that the rejection of Claims 2-8 for obviousness be withdrawn. *Id.* (citing *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1998)).

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### CONCLUSION

The Applicants have endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. Accordingly, arguments in support of the patentability of the pending claim set are presented above. In light of these remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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